

ened stance, stumbling, leaning to one side, weaving when walking and/or toe dragging. These appear to be the most commonly described symptoms. Infected horses may wander aimlessly, walk in circles and/or press their heads against an object. They may be lethargic (depressed), lack awareness or be hyperexcitable, acting fearless. In extreme cases, weakness in the hindquarters may proceed to paralysis of the hind legs, resulting in them going down with difficulty in getting up. They may tilt their heads, have facial or muzzle twitching, a paralyzed or droopy lower lip, grind their teeth or have difficulty or not be able to swallow. Infected horses may go off feed. They may have impaired vision or even become blind. Fever has only been detected in about one-fourth of all confirmed cases. They may have convulsions (seizures) and a coma. Horses that live through 2-3 weeks of a WNV infection usually recover without long-term side effects. If a horse becomes recumbent and cannot get up, it usually dies.

- You can have your horse(s) vaccinated. Vaccination should be complete before the mosquito season starts. Two initial injections are required 3-4 weeks apart. It takes 3-4 weeks after the second injection for active immunity. Horse owners need to discuss the advisability of vaccination with their veterinarian.
- Reduce your horse's exposure to mosquitoes. You should eliminate all mosquito breeding areas in and around your horses and facilities by removing any source of stagnant water. Mosquitoes can breed in one-fourth inch of water, in any water that stands for more than four days. Eliminate

anything that can collect and hold standing water, such as old tires, tin cans, plastic containers, buckets/pails, ceramic pots or other unwanted water-holding containers. Turn over wading pools and wheelbarrows not in use. Clean gutters and down spouts regularly. Do not allow stagnant water to collect in bird baths or change water weekly. Drill holes in containers left outdoors for plants, etc. Clean and chlorinate swimming pools when not in use. Aerate ornamental pools or stock them with fish. Empty and refill water troughs at least twice weekly and water buckets daily. Avoid turning on lights inside stables/barns in the evening and overnight. Mosquitoes are attracted to yellow incandescent bulbs. Black lights (bug zappers) do not attract mosquitoes well. If you have outside lights, use incandescent bulbs to attract mosquitoes away from stalled horses. Eliminate roosting areas for wild birds in barns/stables. If mosquitoes are a problem, you may want to stable horses in screened stalls at dusk and dawn under fans that reduce the flight of mosquitoes. In some situations, it may be advisable to keep horses stalled at night.

- Fog stable/barn premises in the evening with properly labeled, effective product(s) to reduce mosquitoes or apply an appropriately labeled residual insecticide to barns, stalls and corrals. Applying a mosquito repellent containing a synthetic pyrethroid compound (e.g., permethrin) as the active ingredient may offer the best combination of safety and efficacy in products labeled for use on horses. Since horses sweat, the effectiveness of some repellants may be reduced.

What Type of Birds Are Tested for WNV?

Blue jays and crows are the only birds tested for WNV in Tennessee. These birds serve as sentinels of the presence of WNV.

Who Do I Contact for Testing of Dead Blue Jays or Crows?

Your local health department environmental or vector control section should be contacted about testing suspected, freshly dead blue jays and crows.

How Do I Collect Blue Jays and Crows for WNV Testing?

Only freshly dead birds should be collected for testing. There is no evidence that a person can contact WNV from a dead or sick WNV bird. However, it is recommended to invert a plastic garbage bag over your hand, pick up the dead or sick bird, pull the bag over the bird and place in another plastic bag. Place the double-bagged bird in a refrigerator, freeze or keep it on ice until delivered or picked up.

How Do I Keep Current on the WNV Status in Tennessee?

Check the Department of Animal Science WNV Web page at:
<http://www.agriculture.utk.edu/ansci/>
Click on West Nile Virus in TN. If you do not have Internet access, contact your county Extension office.

15M-9/02 E12-4415-00-004-03

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West Nile Virus Facts for Horse Owners

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What Is West Nile Virus (WNV)?

West Nile Virus (WNV) is a new viral disease in the United States that can infect birds, people and horses, even causing death. WNV results in an encephalitis, which is an inflammation of the brain.

Is WNV in Tennessee?

Yes. In 2001 and again in 2002, several wild birds were diagnosed positive for WNV in Tennessee. A horse in Greene County was diagnosed with WNV in 2001, and eight horses have been confirmed as of August 2002 to have WNV (Shelby County-5; Dyer County-1; Jefferson County-1 and Madison County-1).

How Is WNV Transmitted?

Certain kinds of mosquitoes transmit WNV from wild birds, which are the natural reservoir of the disease. The normal cycle of transmission is that a mosquito bites an infected bird, then bites an uninfected bird, transmitting WNV. Occasionally, an infected mosquito bites a people or horses, transmitting the disease to them. Horses are affected by WNV more than other domestic animals. People and horses are incidental but dead-end hosts. There is no known transmission from either people or horses to other humans or animals.

Can Horses Infect People?

No. Once a person or horse contacts WNV, it

is not transmitted to another person or horse. There is no danger in caring for a WNV-infected horse using normal animal care precautions.

Is WNV a High-Risk Disease for People?

No. Most individuals bitten by an infected mosquito have no ill effects or only a few days of mild, summer-like flu symptoms. WNV is a very low death rate disease in humans. Older individuals are more susceptible to the disease, with an occasional death occurring in less than 1 percent of individuals who become seriously sick. Recent data indicate that infected persons are becoming younger.

Do Other Animals Get WNV?

Other animals may become infected by mosquitoes. However, pets, poultry or farm animals, other than the horse, do not become sick. They are not a source of WNV.

What Is the Risk of My Horse Getting WNV?

The risk of a horse getting WNV is very low. In Tennessee, only eight horses in 2002 have been positively identified with WNV. Most horses bitten by an infected mosquito do not become clinically sick.

Can a Horse Die from WNV?

Yes. Since first diagnosed in the United States in 1999, several horses have died and/or been euthanized. Of clinically ill horses, about one-third have such a severe case of WNV that they die or are put to sleep.

Is There a Vaccine for Horses?

Yes. A conditional licensed vaccine by the USDA is approved for use in Tennessee. It is a safe, pure product thought to be effective. Data on the effectiveness of the vaccine are not available yet. Field reports indicate that

the vaccine is working. Two initial injections are required, 3-4 weeks apart. It takes 3-4 weeks after the last injection before a horse has active immunity. After the initial two-injection series, an annual booster is required in the spring before the start of the mosquito season. It may be impossible to distinguish between vaccinated and naturally infected horses, which may be a factor in shipping horses to other countries.

Is There a Treatment for Horses with WNV?

No. There is no specific treatment for WNV. Treatment is primarily supportive, to lessen the severity of the effects of a central nervous system inflammation.

Do Horses Recover from WNV?

Yes. More than one-half of the clinically ill horses recover from WNV. Some infected horses appear normal and can resume normal activities. Others may be limited in their performance after a WNV infection.

Does Vaccination for Eastern and/or Western Equine Encephalomyelitis Protect against WNV?

No. It is recommended that horses in Tennessee be vaccinated with a bivalent vaccine for Eastern and Western Encephalomyelitis in the spring. Eastern Encephalomyelitis has a mortality rate of more than 90 percent.

Does Vaccination for WNV Protect My Horse against Eastern and/or Western Equine Encephalomyelitis?

No. Horses should be vaccinated with a bivalent vaccine, which protects against both Eastern and Western Encephalomyelitis in the spring.

If a Horse in My County Has WNV, Will My Horse Get WNV?

Not from another infected horse. There is no evidence of WNV being transmitted from horse to horse.

Are There Times in Tennessee When WNV Infection Is Unlikely?

WNV is not a threat in the non-mosquito season. If there is a warm spring, mosquitoes may appear as early as late March or early April and continue until the first hard frost in the fall. This time frame may vary depending on weather in different areas of the state.

As a Horse Owner, What Can I Do about WNV?

- You should not be alarmed nor panic.
- You need to be aware of the possible clinical signs of WNV, noted below. At the first indications of such symptoms, you should contact your veterinarian for monitoring and testing of suspected horse(s). Remember, an infected horse may not exhibit any of these signs. And, an infected horse likely will not have all these signs. The following clinical signs also can occur in other equine diseases such as Equine Protozoal Myoencephalitis (EPM); rabies; botulism; cervical vertebral malformation (CVM or wobbler syndrome); Equine Herpesvirus type 1 (EHV1); Equine Degenerative Myeloencephalopathy (EDM) and other encephalitis such as Eastern and Western Equine Encephalomyelitis. WNV is a more progressive disease, occurring more rapidly than EPM.
- **Symptoms:** Horses with WNV are often ataxic, with a general lack of muscular coordination, and difficulty in moving and standing. This may be observed as a wid-